Project Baseline Summary Report

Data Source: **EM CDB**

Report Number: **GEN-01b**

Operations/Field Office: **Savannah River**

Print Date: **3/9/2000**

Site Summary Level: **Savannah River Site**

HQ ID: **0490**

Project **SR-NM04 / Canyon Exhaust Line Item**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

The Canyon Exhaust Line Item project, 92D140, replaces critical exhaust system components in both F and H Canyons. The canyon exhaust system is the primary barrier against radioactive releases. These exhaust facilities maintain negative air pressure throughout the facilities to control radioactive contamination during normal operation. They also provide protection against radioactive releases to the environment in the advent of an abnormal incident. The existing equipment is nearing the end of its 50-year design life. Portions of the system are beginning to fail, resulting in degraded system performance and curtailment of material stabilization operations while equipment is repaired. Personnel safety and environmental regulatory requirements are the driving force for this project.

This is a three-phase project. Phase One, completed in mid-1997, rerouted FB-Line exhaust and F-Canyon recycle vessel vent exhaust to the F-Canyon sand filter. Phase Two, completed in late 1998, replaced F- and H-Area underground diesel fuel tanks in compliance with state and federal regulations for diesel storage. Phase Three, in progress, is constructing new F & H-Area Emergency Diesel Generator Buildings, replacing existing F & H-Canyon exhaust fans and replacing F-Canyon Process Vessel Vent Fans.

Project Status in FY 2006:

The upgrades to F&H-Canyon exhaust systems and F-Canyon PVV fans are scheduled for completion in 2001. Canyon exhaust systems will be in condition to provide the necessary contamination control and release protection through completion of the stabilization mission and facility (s) deactivation. Diesel fuel storage will be in compliance with state and federal regulations.

Post-2006 Project Scope:

Although this project will be complete in FY 2001, the upgrades to canyon exhaust systems it provides will continue to meet their intended functions until facility closure.

Project End State

The critical exhaust and ventilation systems in both F & H-Canyons will provide reliable contamination control and comply with current regulations and DOE Orders.

Cost Baseline Comments:

Standard methodologies for estimating capital project costs were used to develop the estimate for this project. Cost estimates (BO) for this project include both capital Total Estimated Cost (TEC) and Other Project Costs (OPC). Current project TEC is $56,648,000 and OPC is $19,102,000. Total Project Cost (TPC) is $75,750,000. The funding profile assumes the timely approval of the FY 1999 request for reprogramming of $26,300,000 from LI 97D450 Nuclear Material Storage to this project, $22,000,000 of TEC and $4,300,000 of OPC.

BA funding schedule; 92-98 $31,709, 1999-$32,960,
2000-$0, 2001-$11,081., BO funding schedule; 92-98 $20,902, 1999-$17,515, 2000-$26,152, 2001-$11,181. The full cost of PBS work scope may

Project Description Narratives

change based on the authorized funding and priorities in any given year due to changes in site overhead assumptions. For planning and budgeting purposes, work scope costs were estimated using site overhead rates sized for clearance at a funding target of $1222.5 million. For FY 2001 (the budget year), the site overhead is applied and cleared at the funding target, while the work scope below the funding target (planning level) is incremental direct cost. For FY 2002 and beyond, the site overhead is applied and cleared over the total planning level of scope.

Safety & Health Hazards:

This project will replace degraded obsolete exhaust equipment in F & H-Canyons. The canyon exhaust systems are the primary safeguard for the protection of SRS personnel, the public and the environment from the release of radioactive material to the air. These systems must be highly reliable to provide critical contamination control during normal operations, operating incidents, and natural phenomena accidents. The aged exhaust equipment in both F & H-Canyons make it difficult to maintain the required airflow and differential pressure needed for adequate contamination control. Personnel safety and environmental regulatory requirements are the driving forces for replacing critical exhaust equipment in both facilities with modern, reliable equipment.

Safety & Health Work Performance:

Activities and checkpoints are described by the SRS Integrated Management System and specifically controlled by the SRS Work Control System. The conditions and requirements are clearly established and agreed upon prior to the starting of any project and those requirements are contractually binding upon WSRC. WSRC uses the Integrated Safety Management System (ISMS). The key elements of ISMS are to define the scope of work, identify and analyze hazards associated with the work, develop and implement hazard controls, perform work within controls, and provide feedback on adequacy of controls and continue to improve safety management. The WSRC Integrated Procedures Management System is the primary mechanism for implementing the objective, principles and functions of the Integrated Safety Management System. This system establishes Company-Level, Division-level, and Program-specific procedures consistent with organizational roles, and ensures a consistent, discipline site-wide approach to safety while performing work.

PBS Comments:

Periodic upgrades are required in safety-related systems to guarantee the health and safety of workers, the public and the environment. This project is to upgrade the exhaust ventilation systems in both canyons with the replacement of critical fans, motors and diesel fuel storage tanks. The four underground fuel storage tanks are original equipment installed in the early 1950's. The South Carolina Underground Storage Tank Regulations, Part 280, require that the tanks be replaced or removed. Close coordination between Construction and Operations will be assured when replacing fans and installing electrical upgrades.

Baseline Validation Narrative:

This project was validated in accordance with the Savannah River Site program by a DOE-HQ/SR team comprised of program, finance, and project personnel. This project was validated in accordance with the Savannah River Site program by a DOE-HQ/SR team comprised of program, finance, and project personnel in July 1995. This is considered the most recent validation for this project.

General PBS Information

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General PBS Information

Project Validated? Yes **Date Validated:** 5/15/1999

Has Headquarters reviewed and approved project? Yes

Date Project was Added: 12/1/1997

Baseline Submission Date: 7/3/1999

FEDPLAN Project? Yes

Drivers:

CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
N	N	Y	N	N	Y	Y	N

Project Identification Information

DOE Project Manager: Gordon M. Nichols, Jr.

DOE Project Manager Phone Number: 803-952-2021

DOE Project Manager Fax Number: 803-952-2495

DOE Project Manager e-mail address: gordon.nichols@srs.gov

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS Baseline (current year dollars)	66,403	0	66,403	6,102	6,102	5,453	5,453	17,515	26,152	11,181	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	64,730	0	64,730	6,102	6,102	5,453	5,453	17,515	25,243	10,417	0	0	0	0	0
PBS EM Baseline (current year dollars)	66,403	0	66,403	6,102	6,102	5,453	5,453	17,515	26,152	11,181	0	0	0	0	0

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Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006
PBS EM Baseline (constant 1999 dollars)	64,730	0	64,730	6,102	6,102	5,453	5,453	17,515	25,243	10,417	0	0	0	0	0

	2007	2008	2009	2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
PBS Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	3.60%	3.60%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%

Project Reconciliation

Project Completion Date Changes:

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Project Reconciliation

Previously Projected End Date of Project: 10/1/1999

Current Projected End Date of Project: 8/21/2001

Explanation of Project Completion Date Difference (if applicable):

The project was rebaselined, increasing the total cost by $36.7M and extending the schedule by two years. New scope includes: increase in size and location of the new Diesel Generator Buildings, addition of the Technical and Programmatic Risk Assessment Contingency, SRS financial accounting changes, addition of lead shielding for the H-Area Fans, and replacement of both F-Canyon Process Vessel Vent (PVV) fans, motors and baseplates. In FY 1999 $26.3 million is assumed to be reprogrammed for SR-NM03 to support these upgrades to safety systems.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	9,685	**Actual 1997 Cost:**	6,102	**Actual 1998 Cost:**	5,453
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	-1,870	**Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):**			-50
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	-1,920				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):		
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):	30,751	Shielding, F-Canyon PVV Fans, enlarged buildings, Risk Assessment.
Cost Growth Associated with Scope Previously Reported (+):	24,344	Increase project contingency funds, 100% design estimate, financial accounting changes.
Cost Reductions Due to Science & Technology Efficiencies (-):		
Subtotal:	53,175	
Additional Amount to Reconcile (+):	0	
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	**53,175**	

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
PtC Project SR-NM04 end date.	SR-NM04-099		9/30/2001		8/21/2001						

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Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Submit Authorization For Final Acceptance to DOE-SR	SR-NM04-010		9/12/2001		9/12/2001						
SR-NM04 Canyon Exhaust PBS Start	SR-NM04-001		10/1/1996								
Complete Canyon Exhaust Title II Design	SR-NM04-002		3/31/2000								
Begin F-Canyon Exhaust Fan Upgrades (S-4404)	SR-NM04-003		4/26/2000								
Mechanical completion of diesel generator buildings	SR-NM04-004		5/4/2000								
Physical completion of PVV Fan #2	SR-NM04-005		8/31/2000								
Complete PVV Project S-W312	SR-NM04-006		9/30/2000								
Physical Completion of F-Area Canyon Exhaust Fans	SR-NM04-007		4/4/2001								
Physical completion of H-Area Canyon Exhaust Fans	SR-NM04-008		5/13/2001								
Canyon Exhaust Upgrade Line Item 92-D-140 Complete	SR-NM04-009		8/21/2001								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
PtC Project SR-NM04 end date.	SR-NM04-099				Y						Scope of project SR-NM04 will have been completed. No SEG milestone.
Submit Authorization For Final Acceptance to DOE-SR	SR-NM04-010										AFA for Project 92-D-140 will have been submitted to DOE-SR. SEG milestone = M85.
SR-NM04 Canyon Exhaust PBS Start	SR-NM04-001			Y							Initiation of PBS for the work on the Canyon Exhaust Line Item project (SR-NM04). No SEG milestone.
Complete Canyon Exhaust Title II Design	SR-NM04-002										Title II design for the canyon exhaust upgrade pro
Begin F-Canyon Exhaust Fan Upgrades (S-4404)	SR-NM04-003										Field work will have begun on the F-Canyon exhaust fan upgrades (S-

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Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critial Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
											4404). SEG milestone NMC04.
Mechanical completion of diesel generator buildings	SR-NM04-004										Formal mechanical completion will have been achieved for the buildings to house the diesel generators associated with S-4404. SEG milestone = NMC05
Physical completion of PVV Fan #2	SR-NM04-005										Physical completion will have been achieved on PVV fan #2. SEG milestone = M71B.
Complete PVV Project S-W312	SR-NM04-006										Project S-W312 portion of the Canyon Exhaust upgrade line item will have been completed. SEG milestone = NMC06.
Physical Completion of F-Area Canyon Exhaust Fans	SR-NM04-007										Physical completion of the canyon exhaust fans in F-Area will have been achieved. Not a SEG milestone.
Physical completion of H-Area Canyon Exhaust Fans	SR-NM04-008										Physical completion of the canyon exhaust fans in H-Area will have been achieved. SEG milestone = NMC08.
Canyon Exhaust Upgrade Line Item 92-D-140 Complete	SR-NM04-009										The scope of the canyon exhaust line item (92-D-140) will have been completed (SR-NM04). SEG milestone = NMC11